

इंटरनेट

मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 8674 (1989): Polyethylene ropes [TXD 9: Cordage]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

BLANK PAGE



“पुनर्वर्णित १९९५”
“RE-AFFIRMED 1995”

IS 8674 : 1989
(Reaffirmed 2005)

Indian Standard
POLYETHYLENE ROPES — SPECIFICATION
(Second Revision)

भारतीय मानक
पोलिइथाइलीन के रस्से — विशिष्ट
(दूसरा पुनरीक्षण)

UDC 677·072·68 : 677·494·742·2

© BIS 1990
BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

January 1990

Price Group 2

FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards on 12 September 1989, after the draft finalized by the Cordage Sectional Committee had been approved by the Textile Division Council.

The standard has been revised in the light of the experience gained since its last revision in 1980. Opportunity has been availed of to align this standard with the corresponding Draft International Standard ISO/DIS 1969 'Ropes — polyethylene — specification' issued by the International Organization for Standardization (ISO).

In the present revision the following major changes have been made:

- a) Only one grade has been specified in place of the two grades in the earlier version;
- b) Pitch and breaking load requirements have been modified;
- c) New sampling clause has been introduced; and
- d) Diameters of ropes in mm have been given only for reference purpose.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

POLYETHYLENE ROPES — SPECIFICATION

(Second Revision)

1 SCOPE

1.1 This standard prescribes the requirements of 3-strand, hawser-laid, polyethylene ropes of diameter ranging from 4 to 96 mm.

2 REFERENCES

2.1 The following Indian Standards are necessary adjuncts to this standard:

IS No.	Title
IS 2 : 1960	Rules for rounding off numerical values (<i>revised</i>)
IS 2818 (Part 2) : 1971	Indian hessian : Part 2 305 and 229 g/m ² at 16 percent contract regain
IS 3871 : 1984	Glossary of terms relating to fibre ropes and cordage (<i>first revision</i>)
IS 6192 : 1984	Specification for monoaxially oriented high density polyethylene tapes (<i>first revision</i>)
IS 7071 (Part 2) : 1974	Methods of physical test for ropes and cordages : Part 2 Mass, length and linear density
IS 7071 (Part 3) : 1974	Methods of physical test for ropes and cordages : Part 3 Diameter, circumference and lay
IS 7071 (Part 4) : 1986	Methods of physical test for ropes and cordages : Part 4 Breaking load and elongation at break

3 TERMINOLOGY

3.1 For the purpose of this standard, the definitions as given in IS 3871 : 1984 shall apply.

4 MANUFACTURE

4.1 The ropes shall be manufactured from high density continuous polyethylene monofilaments or tapes (see IS 6192 : 1984) having a relative density of 0.94 to 0.96.

4.2 All strands in the rope shall have equal number of yarns or tapes.

4.3 The direction of the lay for 3-strand hawser laid rope, unless otherwise required by the purchaser, shall be 'Z' or right hand lay (see Fig. 1).

4.4 The finished rope shall be flexible, well-laid and free from defects in yarns/tapes, strands and finish.

4.5 Each coil shall be continuous throughout its length and shall not contain any loose ends, splices or joints in the strands or in the rope.

5 REQUIREMENTS

5.1 The ropes shall meet the requirements given in Table 1.

5.2 Tolerances on Linear Density and Mass per Coil

5.2.1 Following tolerances shall be applicable on the specified linear densities and mass per coil as given in Table 1:

Reference Number	Tolerances
Up to 8	± 10 percent
10 to 14	± 8 percent
16 and above	± 5 percent

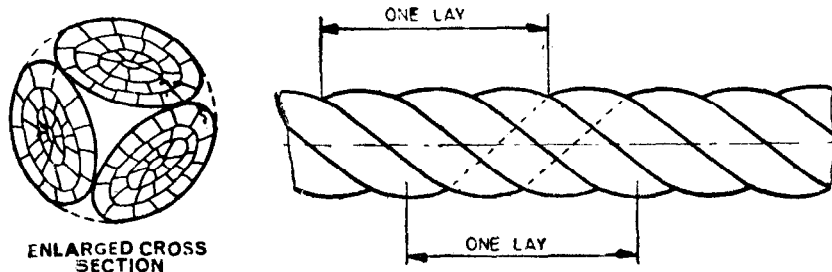


FIG. 1 LENGTH OF LAY FOR 3-STRAND ROPE (HAWSERLAID)

Table 1 Requirements of Polyethylene Ropes
(*Clauses 5.1 and 5.2.1*)

Reference Number (Nominal Dia)	Pitch/ Length of One Lay Max	Linear Density Max	Nominal Mass per Coil of 220 m Length	Breaking Force Min
mm	mm	g/m	kg	deN
4	14.4	8.1	1.782	196
6	21.6	18.2	4.00	392
8	28.8	32.7	7.19	686
10	36	49	10.78	1 070
12	43.2	72	15.84	1 510
14	50.4	95	20.9	2 050
16	57.6	128	28.16	2 750
18	64.8	161	35.42	3 400
20	72	200	44.00	4 190
22	79.2	243	53.46	4 980
24	86.4	295	64.9	5 980
26	93.6	328	72.16	6 800
28	100.8	393	86.46	8 050
30	108	460	101.2	9 300
32	115.2	525	115.5	10 500
36	129.6	660	145.2	13 200
40	144	785	172.7	16 000
44	158.4	950	209	19 250
48	172.8	1 150	253	22 400
52	187.2	1 350	297	25 900
56	201.6	1 570	345.4	29 800
60	216	1 800	396	33 800
64	230.4	2 050	451	38 300
72	259.2	2 590	569.8	48 100
80	288	3 210	706.2	59 200
88	316.8	3 880	853.6	71 100
96	345.6	4 610	1 014.2	83 800
Tolerance, percent	—	see 5.2.1	see 5.2.1	—
Method of Test	IS 7071 (Part 3) : 1974	IS 7071 (Part 2) : 1974	IS 7071 (Part 2) : 1974	IS 7071 (Part 4) : 1986

NOTES

1 The diameter is given only for guidance and for reference.

2 In case the declared length of the coil is other than '220 m' the nominal mass per coil for a rope of particular diameter shall be the product of the linear density and the coil length.

5.3 Length of Coil

5.3.1 The length of each coil when tested as per IS 7071 (Part 2) : 1974 shall not be less than 220 m or as declared. However if so agreed between the buyer and the seller, the length of coil may be tested under zero tension and the following tolerances shall be applicable on the specified/declared length:

Reference Number	Tolerances
Up to 14	± 5 percent
Above 14	± 3 percent

NOTE — Any coil which has been shortened by cutting from it the necessary test sample shall be accepted at its original length and mass as part of the delivery provided that the test sample complies with the specified requirements.

6 PACKING

6.1 All ropes shall be neatly coiled and packed in an inner layer of polyethylene film of about 37 g/m² (40 μm) and under two layers of hessian cloth of 305 g/m² conforming to Type II of IS 2818 (Part 2) : 1971 to prevent damage during transit.

7 MARKING

7.1 Each coil shall have securely attached labels at both ends carrying the following information:

- Name of the material;
- Reference number of the rope;
- Length (m) of the rope;
- Manufacturer's name or trade mark; and
- Any other information required by the buyer.

8 SAMPLING

8.1 Lot

A quantity of coils of rope of the same linear density, dimensions, type and grade, manufactured under similar conditions and delivered to a buyer against a despatch note shall constitute a lot.

8.2 Sample Size

Sampling shall be as representative as possible of the lot subjected to the measurements and tests. Draw the samples at random, at the rate shown by the following formula:

$$S = 0.4 \sqrt{N}$$

Where S is the number of lengths of rope and N is the size of the lot expressed as the number of 220 m coils. When S as calculated is not a whole number, round off the value obtained to give a

whole number in accordance with the requirements of IS 2 : 1960. In cases where S is less than 1, draw the sample length.

8.3 Criteria for Conformity

8.3.1 The lot shall be declared conforming to the standard if the following conditions are satisfied:

- a) Length of each coil satisfies the specified/declared length;
- b) All the individual test samples tested for breaking force satisfy the specified breaking force. However, in case of failure of a test specimen from a coil another specimen shall be retested from the same coil and the same shall satisfy the specified requirement.
- c) Average values of the test results of other characteristics conform to the specified requirements.

Standard Mark

The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The Standard Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well defined system of inspection, testing and quality control which is devised and supervised by BIS and operated by the producer. Standard marked products are also continuously checked by BIS for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act, 1986* to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Director (Publications), BIS.

Revision of Indian Standards

Indian Standards are reviewed periodically and revised, when necessary and amendments, if any, are issued from time to time. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition. Comments on this Indian Standard may be sent to BIS giving the following reference:

Doc : No. TDC 14 (2411)

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

BUREAU OF INDIAN STANDARDS

Headquarters :

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones : 331 01 31, 331 13 75

Telegrams : Manaksanstha
(Common to all Offices)

Regional Offices :

	Telephone
Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg NEW DELHI 110002	{ 331 01 31 331 13 75
Eastern : 1/14 C. I. T. Scheme VII M, V. I. P. Road, Maniktola CALCUTTA 700054	36 24 99
Northern : SCO 445-446, Sector 35-C, CHANDIGARH 160036	{ 2 18 43 3 16 41
Southern : C. I. T. Campus, IV Cross Road, MADRAS 600113	{ 41 24 42 41 25 19 41 29 16
Western : Manakalaya, E9 MIDC, Marol, Andheri (East) BOMBAY 400093	6 32 92 95
Branches : AHMADABAD. BANGALORE. BHOPAL. BHUBANESHWAR. GUWAHATI. HYDERABAD. JAIPUR. KANPUR. PATNA. TRIVANDRUM.	